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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/883,391

06/19/2001

Takayuki Kifuku

Q64978

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09/28/2005

SUGHRUE, MION, ZINN, MACPEAK & SEAS  
2100 Pennsylvania Avenue, N.W.  
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EXAMINER

SMITH, TYRONE W

ART UNIT

PAPER NUMBER

2837

DATE MAILED: 09/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/883,391

Applicant(s)

KIFUKU ET AL.

Examiner

Tyrone W. Smith

Art Unit

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-8 and 11-20 rejected under 35 U.S.C. 103(a) as being unpatentable over Iwashita (5467001) in view of Mori (JP06-225573).

Regarding Claims 1-3 and 11-20. Iwashita discloses a control method for alternating current motor, which includes a drive circuit (Figure 3 #8) for driving the motor (Figure 3 #9) and a motor control apparatus for control the drive circuit. The motor controller limits a motor current by providing a motor current limit value (refer to Figure 4 steps S1-S10 item Ko) that is integrated with a value of the predetermined function of the phase current of the motor (refer to Figure 4 steps S1-S10 item 10). Limiting the target value of the target value of the phase current in accordance with the motor current limit value (column 5 lines 1 1-67, column 6 lines 1-41 and column 7 lines 43-60). However, Iwashita does not disclose a motor current limit value calculating section for providing a motor current limit value that is an integrated value of a predetermined function of the phase current of the motor act as an index of power consumption.

Mori discloses a vector controller for an Induction Motor, which includes a PWM inverter/driver (Figure 3 #12) for the motor; a micro-controller which limits a motor current (d and q axial by vector synthesizing) in accordance with an integrated value of a predetermined function of a phase current (index of power consumption). The micro-controller for Mori's

invention, as illustrated in Figure 3, analog-digital converters (7), current control section (6), coordinate transformation section (9 and 10), transducer (8) and an integrator (5). Also, refer to Figure 6 where the current control section includes limiter circuits (6e and 6f), PI controller (6a and 6c) and interference term compensation means (6c and 6d).

It would have been obvious to one of ordinary skill in the art at the time of invention to use Iwashita's a control method for alternating current motor with Mori's a vector controller for an Induction Motor. The advantage of combining the two would assure a vector control state even if the DC voltage of a PWM inverter were lowered in order to vector control a motor by the inverter having a current control system.

Regarding Claims 4-8. Mori discloses a vector controller for an Induction Motor, which includes a PWM inverter/driver (Figure 3 #12) for the motor; a micro-controller which limits a motor current (d and q axial by vector synthesizing) in accordance with an integrated value of a predetermined function of a phase current (index of power consumption). The micro-controller for Mori's invention, as illustrated in Figure 3, analog-digital converters (7), current control section (6), coordinate transformation section (9 and 10), transducer (8) and an integrator (5). Also, refer to Figure 6 where the current control section includes limiter circuits (6e and 6f), PI controller (6a and 6c) and interference term compensation means (6c and 6d).

It would have been obvious to one of ordinary skill in the art at the time of invention to use Iwashita's a control method for alternating current motor with Mori's a vector controller for an Induction Motor. The advantage of combining the two would assure a vector control state even if the DC voltage of a PWM inverter were lowered in order to vector control a motor by the inverter having a current control system.

**Allowable Subject Matter**

3. Claims 9 and 10 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**Response to Arguments**

4. Applicant's arguments filed June 25, 2005 have been fully considered but they are not persuasive. The Applicant argues that the reference, Mori (JP06-225573), does not disclose the motor current limit value calculating section for providing a motor current limit value that is an integrated value of a predetermined function of the phase current of the motor as an index of power consumption.

Examiner's rejection is based on the claims as presented, where the motor current limit value calculating section (Figure 3 item 9) for providing a motor current limit value that is an integrated value of a predetermined function of the phase current of the motor (Figure 3 items Iu and Iv; Figure 8; Figure 9) as an index of power consumption. Refer to Figures 3 and 4.

Examiner suggests amending the claims in order to expedite prosecution of the case.

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

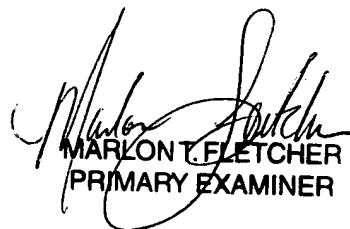
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tyrone W. Smith whose telephone number is 571-272-2075. The examiner can normally be reached on weekdays from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin, can be reached on 571-272-2800 ext. 37. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tyrone Smith  
Patent Examiner

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MARLON T. FLETCHER  
PRIMARY EXAMINER